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Japanese Students' Preference Concerning Phonetics and Phonology Issues

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Abstract

Many Japanese EFL students indicate their desire to learn about the subtle characteristics of English vowels, consonants, and prosodic features, but, once enrolled in a phonetics and phonology course, they tend to express their feelings of discomfort and difficulty. The major problem appears to be the large number of issues covered in each semester or the excessive amount of information provided in each class session. The present paper probes Japanese university students' preference concerning the phonetics or phonology issues so that the instructor can prioritize the points of instruction in syllabus design.

Introduction

As an EFL teacher at Japanese universities, I have noticed that it is extremely difficult to draw university students' attention to phonetic or phonological issues. Students' lack of interest in the pertinent academic area might be partly attributable to the government's guideline that discourages the teaching of phonetic symbols or any explicit instruction of pronunciation in junior high school and high school. Students are not accustomed to an analytical study of English speech sounds. The proclamation issued by the Ministry of Education, Culture, Sports, Science and Technology has been clearly based on its optimistic assumption that the introduction of oral communication courses in junior high and high schools—especially those taught by native speakers of English—would provide enough aural input so that students would automatically assimilate the features of authentic English accents. In reality, the class time for oral/aural communication at most schools is normally limited to one or two hours per week, and it is simply unrealistic to expect the average students to internalize native-like pronunciation inductively. Ideally, students should be guided to learn authentic pronunciation through kinesthetic training and an extensive exposure to native speakers' speech, instead of depending on arbitrary symbols and abstract concepts. However, considering the actual Japanese EFL classroom situation, an explicit instruction of major phonetic points should be maintained, at least, to partially compensate for the absence of natural environmental support.

At the same time, it is necessary on the side of EFL teachers to reconsider the ways to teach pronunciation and carefully decide which items to teach during a 15-week semester. Students' reluctance to study phonological issues might be partly derived from the fact that they are required to learn a large number of abstract terms and logical concepts. In the

semester-end class evaluation of general EFL courses, students often express their lack of confidence in pronunciation and their desire to learn methods to improve their pronunciation. However, while they wish to learn about the detailed characteristics of English phonemes, they tend to be overwhelmed by the teacher's explanations on numerous theoretical issues. The phonetic/phonological points to be covered within a semester should be, consequently, prioritized so that the limited class time would be effectively allocated for interesting and useful issues alone. In order to do so, students' needs and preferences must be closely examined, and, as the first step, I have decided to conduct a survey of English-major students enrolled in a phonetics and phonology course at a private university in Tokyo. The recruited students have a comparatively strong interest in pronunciation, while similar surveys on those who are not equally enthusiastic about pronunciation will also have to be conduced in the future.

Studies on Pronunciation Teaching

Derwing and Munro (2005) claim that, as compared to the other sub-fields of ESL/EFL education, pronunciation has always been a marginalized topic in the applied linguistics. This area has never been thoroughly explored despite the fact that many ESL/EFL teachers are on the lookout for resources for pronunciation teaching. The scarcity of empirical studies might be partly derived from ESL/EFL teachers' disagreement on ideological principles.

Different teachers and researchers—because of their varying pedagogical beliefs and principles—have set opposing aims and rationales for research in the field (Levis, 2005). First of all, in terms of teaching methodologies, the supporters of audiolingualism, for example, have strongly emphasized the importance of pronunciation while those who advocate cognitive or communicative teaching approaches have completely ignored this dimension. Then, among those who acknowledge the value of pronunciation teaching, some have insisted on the nativeness principle while others have argued for the intelligibility principle for the reason that the complete elimination of a foreign accent would be unrealistically difficult and might even entail negative consequences.

Japanese EFL teachers have traditionally taken it for granted that their students should strive to learn an authentic accent that is close—if not identical—to British Received Pronunciation or General American. However, Jenkins (2002) argues that it is inappropriate to encourage non-native speakers to adopt subtle features of native speakers' speech (e.g., elisions, contractions, assimilations, and weak forms). Such an attempt might even impair intelligibility if L 2 speakers learn them imperfectly. She analyzed the interactions between ESL students of various L 1 backgrounds and categorized the core phonological items that were imperative for intelligibility and the non-core areas that were not crucial for communication. For instance, she pointed out that the maintenance of contrast between

long and short vowels (e.g., as in *live* and *leave*) were crucial and should be taught to all groups of students in order to avoid miscommunication. On the other hand, the replacement of [t] with flapped [ɾ] (e.g., *water*)—commonly observed in American English—is not only unnecessary, but it might reduce the intelligibility when non-native speakers replaced the regular voiceless alveolar stop with an imperfect form of the flapped allophone.

My informal prediction, however, is that different teaching approaches will eventually be synthesized with time (Celce-Murcia, Dornyei, & Thurrell, 1997). Intelligibility might remain as a widely supported principle now that more than a billion people speak English fluently as their second or foreign language, as opposed to the 400 million native speakers. On the other hand, the Japanese learners' tendency to regard the authentic British or American accent as the role model is likely to persist as well. Then, once the advocates of nativeness and intelligibility principles have settled on the best compromise (i.e., to help L 2 speakers learn the best accent they can acquire under the normal circumstances), the remaining issue would be the prioritization of instruction items—especially between the two competing areas, which represent segmental and suprasegmental phonemes, respectively.

Researchers' views on the importance of segmental and suprasegmental features vary. Field (2005), in his endeavor to prove that suprasegmental phonemes contribute to intelligibility more greatly than segmental features, examined how the lexical stress might influence native and nonnative listeners' perception. His study was modeled on an L 1 study that showed that certain types of stress misplacement reduced intelligibility to a considerable degree (Cutler & Clifton, 1984). His research questions concerned whether or not lexical stress contributed to intelligibility and, if so, in what particular way. He prepared two sets of 20 disyllabic English words, which followed either a strong-weak pattern (e.g., *SECond*) or a weak-strong pattern (e.g., *beGIN*). Another point of his analysis was to determine how a change of vowel quality affected the intelligibility (e.g., alteration from *WALlet* [wɒlət] to *walLET* [wɒlɛt]).

The selected words were manipulated so that the stress position was shifted either from right to left or from left to right. A subgroup of the right-shifted words was accompanied by a change of vowel quality. The participants comprised 82 native speakers, who were 15-year-old students enrolled at a British secondary school, and 76 non-native speakers of English with various L 1 backgrounds, studying at two leading British private language schools. It was arranged for these participants to hear individual words out of context—either in the standard or modified form—and transcribe the words on a supplied answer sheet.

The results of the *z*-tests indicated that the leftward shift of a lexical stress did not affect the participants' recognition of words to a statistically significant degree, but there was a significant difference between the recognition of the standard forms and the right-shifted forms not accompanied by a change of vowel quality. The loss of intelligibility was

much lower when the right-shifted form was accompanied by a change of vowel quality, and the investigator explained that the change from a schwa to a full vowel provided the listeners with more information to identify the target word. There was basically no difference between the native and non-native listeners' responses to the standard and modified stimuli. Thus, the data from Field's study has supported the view that non-segmental features greatly contribute to the recognition of words, while also providing partial evidence that segmental phonemes (i.e., vowels) play a certain role as well.

On the other hand, Riney, Takagi, and Inutsuka (2005) produced the data to suggest that segmental phonemes are more difficult to master and, thus, should be treated as important items for instruction. They tried to determine whether or not Japanese listeners relied on the same set of phonetic parameters as native English speakers (i.e., *segmental parameters* including vowels and consonants vs. *non-segmental parameters*, such as intonation, fluency, and speech rate, etc.) in perceiving L 1 or L 2 speakers' accent.

First, the investigators recruited five American speakers (three women and two men) and eleven Japanese speakers (eight women and three men) and tape-recorded their pronunciation of English sentences. The same speakers' speech sounds were recorded twice-the second taping conducted 42 months after the first session—so that the Japanese students' improvement over the pertinent period could be measured. Then, the investigators engaged another group of untrained English *listeners*, which included ten Japanese (seven women and three men; their TOEFL scores ranging between 443 and 497 with the mean of 466) and five Americans (whose gender was not specified) in the perceptual assessment of a foreign accent. The listeners were instructed to rate the taped sentences on a nine-point scale with nine representing the most authentic American pronunciation.

The groups of American and Japanese listeners' ratings agreed in that they both judged native speakers as perfect or nearly perfect, and they also consistently graded the Japanese speakers at varying proficiency levels. Japanese listeners' judgment on the Japanese speakers' improvement matched the American listeners' judgment in eight out of 11 cases (i.e., for 11 Japanese speakers). However, when the researchers extracted 12 sentences on which NS and NNS listeners' ratings greatly differed and had the second group of listeners (one Japanese and one American with phonetics background) perform an auditory analysis, the results showed that the untrained American and Japanese listeners had paid attention to different phonetic features. As regards the five sentences (out of the 12) on which the American listeners recognized clear differences over the 42-month period, these listeners detected distinctive segmental changes such as the consonants /l/ and /r/. The Japanese listeners claimed that the Japanese speakers had clearly improved on the remaining seven sentences, reporting that they had detected definite changes in intonation or fluency. Riney et al. also conducted a spectrographic analysis to compute the correlations between the duration of certain sentences and the listeners' rating on them. The produced data showed that the

Japanese listeners depended twice more on sentence duration than the American counterparts in deciding how native-like Japanese speakers sounded.

The overall implication of Riney et al.'s study was that non-native listeners relied more on non-segmental parameters in discriminating between Japanese and American speakers' accents than native English-speaking listeners because the precise features of segmental phonemes were more difficult for L 2 speakers to recognize.

However, it is important to acknowledge that the perception—or production—of segmental and suprasegmental features are closely interrelated with each other, and, most of the time, students are likely to learn them simultaneously. Field's (2005) explanation that a full vowel provided more information than a schwa and helped listeners recognize the target word strengthens this view. In support of the same position, Gimson (1989) argues that "/ə/ may represent the reduced form of any vowel or diphthong in an unaccented position" (p. 126). A number of phonemes seem to have historically merged into this neutral allophone on the phonetic level. More research is required before the exact relationships between stress and vowels or between any combination of segmental and suprasegmental phonemes might be explicated.

The Purpose of the Present Study and Research Questions

My ultimate purpose is to examine the degree to which Japanese EFL students are interested in each of the major issues of phonetics and phonology. By ranking the items according to their preference, it will become possible for EFL teachers to prioritize the points of instruction in their syllabus design. However, the immediate purpose of the present paper is to help formulate the research design for a full-scale study that I hope to conduct in the future. Statistical analyses will be performed for the sake of research experience and in search of useful clues for future studies. The following two research questions have guided this study:

1. What are the individual phonetic/phonological issues that Japanese EFL students are interested in?
2. Do Japanese EFL students have a general preference for either segmental phonemes or suprasegmental phonemes?

A factor analysis will be performed to examine the students' responses to the closed-ended questions. Although no a priori hypothesis has been set, as regards Question #2, the broad conceptual framework is that the students' responses might cluster either for segmental phonemes or suprasegmental phonemes. The results of Riney et al.'s (2005) study and my daily observations as an EFL learner/teacher suggest that Japanese students might find the segmental phonemes more challenging and more interesting. English vowels and consonants are so different from those in Japanese that it would not be surprising for

Japanese students to show a strong interest in the segmental phonemes and their allophones, regarding them either as novelties or as a challenge. The students' responses to the open-ended questions will be coded and qualitatively analyzed to gain evidence for or against the tendencies indicated by the results of the quantitative analysis.

Methods

Participants

All the participants in the present study were female students enrolled in the English phonetics course that the investigator taught at a private Japanese university. They were all juniors and seniors, majoring in English language and literature; the pertinent phonetics course was an elective offered to upper-division students. Unfortunately, out of the 45 registered students, 10 were absent on the day that the survey was administered (as it happened to be a job interview season for fourth-year students). Then, three of the returned forms were incomplete and, thus, removed from the data. The number of valid respondents was 32.

While the statistical data of their proficiencies were not available, the students had all completed a five-month semi-immersion ESL program at the university's satellite campus in the United States during the latter half of their second year (i.e., after one and a half years of intensive skills training in Tokyo). After their return to the Tokyo campus, they were obligated to take several content-based English courses every semester to maintain their practical English skills. Consequently, it should be safe to assume that they were more exposed to spoken English than the average students at many of the other Japanese universities. At the same time, the recruited group was clearly more interested in pronunciation than the average students at the same school. They had chosen to take the phonetics course of their own accord while many of their classmates were more eager to sign up for cultural studies or cognitive, communicative types of English lessons.

Materials

In order to decide which theoretical issues should be represented in the questionnaire, I referred to some of the credited phonetics and phonology textbooks: Lagefoged (1993), Kreidler (1989), Gimson (1989), O'Connor (1973), and Heffner (1950). Lagefoged explains all the basic issues in articulatory phonetics, and Kreidler's book—primarily a phonology textbook—also covers both the major phonetics and phonology issues, presenting excellent formulaic summaries of various phonological processes. Gimson (1989) elaborates on various dialectal differences, describes the historical background of each vowel or consonant, and provides pieces of advice for ESL/EFL learners. O'Connor devotes a substantial number of pagers to the explanation of prosodic issues. Then, as regards the issue of assimilatory changes, Heffner's book has proven to be useful since it describes a number of subtle sound changes

in context.

For the current study, however, the items included in the questionnaire were restricted to practical issues that could be applied to actual pronunciation training. Purely theoretical issues were excluded even if they were among the major topics discussed in the authentic textbooks: e.g., voice onset time, cardinal vowels, spectrographic analysis, dialectal differences, historical backgrounds, etc. Aspiration was included in the questionnaire as an allophonic variation of a voiceless stop, but the theoretical discussion on the voice onset time was dispensed with. The pitch movement was not presented as an isolated item because, in English—an intonation language—pitch operates on whole utterances, instead of individual words. The compiled questionnaire included 28 closed-ended questions and five open-ended questions.

Procedure

The recruited students were requested to fill out a prepared questionnaire form (see Appendix I) during a regular class session. In the closed-response section, the students were asked to indicate the degree to which they were interested in each item by marking on a five-point Likert scale (1=not interested at all, 2=not very interested, 3=can't say, 4=interested, 5=very interested). In the open-response section, the students wrote their comments freely regarding which items they found interesting or useful or which aspects of the course they found difficult or troublesome. The last open-ended question probed the reasons why the students had decided to sign up for the phonetics course.

Instead of leaving the participants alone to answer the questions within the designated time, the investigator read out each question item in the questionnaire and explained its meaning in Japanese with a specific example. The questionnaire in Appendix I was the original format distributed to the students, and the students were urged to heed the fact that they were expected to indicate the degree of their *interest*—not answering the questions in brackets, which were designed to present specific examples and phonetic symbols visually. The administration of the survey took a total of approximately 30 minutes.

The alpha level for all statistical decisions was set at .05.

Results

Closed-ended Questions

The descriptive statistics for the students' responses are presented in Table 1. Fully acknowledging that the small *n*-size of 32 is not adequate for strict statistical analysis, I proceeded to carry out the computations in hopes of finding hints as to how the questionnaire should be revised for a full-scale study in the future. The means of the scores for all the question items were above 3.00, except for #4 (description of consonants, 2.81), #8 (narrow IPA transcription, 2.78), and #10 (triphthongs, 2.75), suggesting that the participants

Table 1
Descriptive Statistics of the Questionnaire Survey

Item	*M*	95% confidence interval		*SD*	Skewness	*SE*	Kurtosis	*SE*
		Lower	Upper					
1. word stress	3.53	3.17	3.90	1.02	−.68	.41	−.06	.81
2. predicting word stress	3.63	3.30	3.95	.91	−.26	.41	−.57	.81
3. sentence stress	3.81	3.48	4.15	.93	−.63	.41	−.23	.81
4. consonants	2.81	2.43	3.19	1.06	−.12	.41	−.70	.81
5. vowels	3.13	2.75	3.50	1.04	.29	.41	−.43	.81
6. strong/weak vowels	3.28	2.97	3.59	.85	−.26	.41	−.97	.81
7. broad transcription	3.38	2.95	3.80	1.19	−1.18	.41	−.70	.81
8. narrow transcription	2.79	2.47	3.09	.87	−.17	.41	−.63	.81
9. diphthongs	3.03	2.69	3.37	.93	−.07	.41	−.67	.81
10. triphthongs	2.75	2.41	3.09	.95	.78	.41	.28	.81
11. vowel length	3.59	3.22	3.97	1.04	−.36	.41	−1.01	.81
12. contextual assimilation	3.78	3.48	4.08	.83	−.27	.41	−.31	.81
13. historical assimilation	3.38	3.00	3.75	1.04	.08	.41	−1.13	.81
14. palatalization	3.32	2.99	3.69	.97	.36	.41	−.73	.81
15. nasalization	3.44	3.13	3.74	.84	.04	.41	−.43	.81
16. glottal stop	3.78	3.51	4.05	.75	−.10	.41	−.25	.81
17. flap sound	3.22	2.82	3.52	.83	.63	.41	.24	.81
18. partial assimilation	3.44	3.18	3.70	.72	.80	.41	.23	.81
19. coarticulation	3.31	2.99	3.64	.90	.18	.41	−.61	.81
20. dissimilation	3.47	3.17	3.77	.84	−.07	.41	−.45	.81
21. liaison	3.66	3.32	3.99	.94	−.74	.41	.90	.81
22. deletion	3.13	2.82	3.43	.83	−.25	.41	.43	.81
23. aspiration	3.28	2.96	3.60	.89	−.02	.41	−.83	.81
24. intonation	3.56	3.23	3.89	.92	.29	.41	−.77	.81
25. sentence stress	3.38	3.06	3.69	.87	−.22	.41	−.74	.81
26. accent	3.28	2.96	3.60	.89	−.31	.41	.35	.81
27. phonotactics	3.22	2.93	3.50	.79	.79	.41	.08	.81
28. syllable division	3.50	3.21	3.79	.80	.40	.41	−.30	.81

Table 2
Internal Reliability **(*N*=32)**

Factor	*N*	*k*	Cronbach Alpha	Standardized Alpha
Factor One	32	15	.90	.90
Factor Two	32	2	.64	.64
Factor Three	32	2	.57	.57

were, in general, strongly interested in the presented phonetic issues. Both *z*-skewness and *z*-kurtosis for all the items were less than ±1.96, satisfying the assumption of normal distribution.

The dimensionality of the 19 items in the questionnaire was analyzed using principle axis factoring analysis. At first, I started with 29 question items, and, after the extraction,

Table 3
Factor Analysis of Questionnaire Items ($N=32$)

Item	Factor Loadings			Communalities
	Factor One	Factor Two	Factor Three	
6. strong/weak vowels	.52			.47
10. triphthongs	.63			.55
11. vowel length	.56			.40
14. clear and dark /l/	.84			.74
16. glottal stop	.68			.49
17. flap	.63			.40
18. partial assimilation	.58			.34
19. coarticulation	.74			.47
20. dissimilation	.64			.44
23. aspiration	.74			.57
25. sentence stress	.52			.31
28. syllable division	.55			.55
21. liaison		.70		.50
22. deletion		.61		.51
4. consonants			.76	.79
5. vowels			.88	.80

Note. Loadings at .5 or greater are considered strong enough for inclusion in a given factor.

15 items loaded on Factor One, and two items loaded on Factors Two and Three, respectively. However, the Kaiser-Meyer-Olkin and Bartlett's Test produced the measure of sampling adequacy value of .41. The inter-item correlation was so low that I was forced to exclude the items that did not load on any factor and repeat the entire process of a factor analysis from the beginning.

With nine items (Items 2, 3, 7, 8, 12, 13, 15, 24, and 26) eliminated, a factor analysis was performed again with the remaining 19 items. The cutoff point for including items in factors was set at .50, and the rotated solution yielded three factors. (The scree plot suggested four-factor resolution, but only three of the components indicated the Eigen value of 1.0 or higher.) Factor One accounted for 31.67% of the item variance; Factors Two and Three accounted for 10.21% and 8.62% of the item variance, respectively. The cumulative extraction sum of squared loadings was 50.50. The KMO value was .61 (i.e., >.60), and the Bartlett's test of sphericity was significant at .001. Since the correlation coefficients in the factor transformation matrix were unsymmetrical, I referred to the Direct Oblimin statistics. Twelve items loaded on Factor One at .50 or higher (Items 6, 10, 11, 14, 16, 17, 18, 19, 20, 23, 25, and 28), two items loaded on Factor Two (Items 21 and 22), and two items loaded on Factor Three (Items 4 and 5).

Cronbach alpha internal reliability tests were performed for the three individual factors. As for Factor One, both the Cronbach alpha and standardized item alpha values were .90 (i.e., >.70). However, the Cronbach alpha values (as well as the standardized item alpha

values) for Factor Two and Factor Three were .64 and .57, respectively. Consequently, it must be acknowledged that the internal reliabilities for Factors Two and Three were not sufficiently high.

Open-ended Questions

The open-ended questions have resulted in a relatively small number of comments, and most of the answers were mere repetitions of key words extracted from the closed-ended questions (e.g., "I am interested in *contextual assimilation*"). Only a few comments depicted the issues not covered in the closed-ended questions. However, even the simple, mechanical responses helped confirm which areas the students had an interest or experienced difficulties in because the participants wrote the comments of their own accord, instead of being forced to circle one of the given alternatives. (The table in Appendix II will visually illustrate the general spread of their answers.)

As regards Question #1 (i.e., the items of interest), there was a fairly clear-cut tendency for participants to enjoy assimilatory changes, including flapped [ɾ], nasalization, deletion, historical assimilation, and vowel length. On the other hand, there were also students who indicated their interest in suprasegmental phonemes, such as accent, metric foot, sentence stress, intonation, and the prediction of word stress. Surprisingly, two students expressed their strong interest in IPA transcription.

However, in response to Question #2 (the most useful or practical issues), a comparatively large number of students referred to suprasegmental phonemes (e.g., metric foot and accent). As for the segmental phonemes, contextual assimilation and glottal stop interested one student each, but no one mentioned any other assimilatory processes. Again, there were students who preferred the study of phonetic symbols or the description of consonants (i.e., place/manner of articulation and voicing) or vowels (i.e., tongue position, lip-position, and tense/lax distinction), reflecting the fact that their concepts of usefulness or practicality varied from person to person.

The items that the students found difficult (Question #3) included the description of vowels, diphthongs, triphthongs, accent, sentence stress, distinction between strong and weak vowels, deletion, aspiration, and syllable division. That is, the answers ranged over various areas, and there was no single issue that the participants unanimously claimed to be difficult. Instead, many of the participants were overwhelmed by the large amount of information provided within a single lesson or the great number of issues covered within the same semester. Some expressed their difficulties with numerous vowels and consonants to learn, and others described their struggle with technical terms or phonetic symbols. (Interestingly, the person who found the memorization of phonetic symbols difficult also stated, in response to Question #2, that IPA transcription was useful.)

The students' comments for Question #4 (the most troublesome aspects) also ranged over

various areas (including the description of consonants, rhythm, aspiration, and syllable division), but, again, no single issue emerged as an undeniably unpopular item. Two students claimed that the memorization of terminology was troublesome, and one student was perplexed at the numerous sub-areas of phonetics. It turned out that the pertinent phonetics course (on which this study was conducted) contained more issues or areas than the students could deal with.

Some of the students acknowledged their own inability to utilize the knowledge of phonetics to improve their pronunciation: e.g., "I cannot determine which syllables to accent and cannot distinguish strong and weak syllables," "I cannot correct my own pronunciation, using what I was taught in the phonetics course," or "I cannot recognize the differences between similar sounds."

The most common reason that the students had decided to register for the phonetics course was that they needed or wished to improve their own pronunciation. One participant's comment, expressing her desire to learn "correct and beautiful English," might reflect Japanese students' inclination toward an authentic, native-like accent, instead of merely intelligible pronunciation. However, it is also important to notice that as many as four students stated that they had decided to study phonetics and phonology to expand their general academic knowledge. Yet another group of students had chosen phonetics because it was a prerequisite for their EFL teaching credentials or the knowledge of phonetics would help their understanding of sociolinguistics or psycholinguistics.

Discussion

Again, with the small *n*-size, this pilot study has been conducted mainly for the purpose of formulating the research design for future studies, but it is still worthwhile to consider the outcome for methodological implications. From a phonetic point of view, the items included in Factor One constitute two distinctive subgroups. The first subgroup includes items related to assimilatory changes (Items 14, 16, 17, 18, 19, 20, and 23). The second subgroup comprises vowel-related issues (Items 6, 10, and 11); it must be noticed, however, that these items represent subtle characteristics of vowels that are not described in general EFL textbooks. Therefore, there is a possibility that the students might have considered them to be equivalent to vowel assimilation. Although Item 25 (sentence stress) and Item 28 (syllable division) have remained to be anomalies, as a whole, Factor One can be tentatively labeled as the *sound change* factor.

Factor Two comprises Items 21 (liaison) and 22 (deletion), which also happen to represent assimilatory changes in context. The only notable difference is that liaison and deletion are forms of phonological *reduction* and, consequently, represent somewhat simpler processes. Considering the fact that several students' comments reflect their desire to learn better pronunciation on the one hand and their inability to cope with complex logical analysis on

the other hand, this factor has its distinct characteristics: i.e., the interesting phonetic points that students can easily understand or internalize. Factor Two might be informally labeled as the *reduction* factor.

Finally, the loading of Items 4 and 5 (description of consonants or vowels) on Factor Three implies the existence of students who are interested in descriptive or analytical types of work. While many Japanese students are inclined toward practical pronunciation lessons, we must acknowledge that there are research-oriented students who are willing to engage in classification or categorization tasks. Factor Three might be regarded as the *classification* factor.

The students' responses to open-ended questions basically corresponded to the results of the factor analysis, indicating their strong interest in assimilatory changes. On the other hand, the open-ended answers also provided evidence that there were students who considered prosodic issues to be more practical and useful. One possible interpretation is that EFL students can learn accent and metric foot more easily than segmental phonemes and immediately utilize them to improve their pronunciation; consequently, they might have considered them to be more practical or useful. An alternative view is that, as Jenkins (2002) claims, the students might have thought that the assimilatory processes were not crucial for communication while they were intrigued by the unique phenomena. As of this point, the interpretation should be restricted to the fact that students are interested in both segmental and suprasegmental phonemes. A more meticulously designed study is required to clarify this issue.

The participants' free comments have also affirmed the existence of those who are interested in IPA transcription, the classification of vowels and consonants, and phonological analysis in general. While there is a clear tendency for students to wish to improve their pronunciation, phonetics teachers should not overlook the fact that there are analytical-minded or research-oriented students in university classes.

The items that students find difficult vary from person to person, and there appears to be no inherently difficult issue as long as proper explanations are offered. The most serious concern is the amount of information to provide in each session or course, instead of the types of issues. The items or theoretical issues to be covered in a phonetics course should be carefully considered and weighed against each other so that the requirement in each class meeting will be optimally regulated.

Conclusion

My first research question was: "What are the individual phonetic/phonological issues that Japanese EFL students are interested in?" The tentative answer to this question is that assimilation is the most popular issue. However, some students prefer prosodic features, and there is also a group of students who are keen on the analytical classification of

phonemes or IPA transcription.

As regards the second research question (i.e., "Do Japanese EFL students have a general preference for either segmental phonemes or suprasegmental phonemes?"), I must withhold my judgment as of this point. The responses to the closed-ended questions suggested that the students were interested in segmental phonemes, including assimilatory changes. However, the descriptive statistics and the open-ended responses indicated that many students were interested in suprasegmental phonemes.

One way of restructuring the questionnaire will be to draw up matrices across the phonetic items on the one hand and the levels of questioning (i.e., interest, usefulness, difficulty, and troublesomeness) on the other hand. That is, in the closed-response section, students should be asked how much they are interested in a given item and how useful they consider it to be, separately. (Several students' free comments have suggested that they found a certain issue practical but were not personally interested in it.) Likewise, separate question items should be prepared to examine the extent to which students might find a certain issue difficult and to measure the extent to which they might find it troublesome. Furthermore, I must acknowledge that the prepared questionnaire contained more question items related to segmental phonemes than those connected with suprasegmental phonemes, and such imbalance must be corrected in future studies.

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Appendix I

A Survey of Students' Interests in Phonetic/Phonological Issues

I. Do you think you would like to know more about the following issues of phonetics and phonology? Indicate the degree of your interest by circling the number on the five-point scale.

1=not interested at all, 2=not very interested, 3=can't say, 4=interested, 5=very interested

1. general rules for word stress (e.g. Do you know the stress position in *import* (verb) vs. *import* (noun) or *white house* vs. *White House*?)
   1. 2. 3. 4. 5.
2. rules for predicting word stress (e.g. Can you guess where the stress falls in the words *cinema* and *potato*?)
   1. 2. 3. 4. 5.
3. sentence stress (metrical foot) (e.g. Which do you think sounds better, *egg and bacon* vs. *bacon and egg*?)
   1. 2. 3. 4. 5.
4. description of consonants (e.g. Do you know the place of articulation, manner of articulation, and voiced/voiceless distinction for [f]?)
   1. 2. 3. 4. 5.
5. description of vowels (e.g. Can you tell the high-low position, the front-back position, the lip-rounding condition (i.e. flat vs. rounded), or the tense-lax distinction for [ɪ]?)
   1. 2. 3. 4. 5.
6. difference between strong vowels and stress vowels (e.g. Do you know if a word stress *can* fall on the syllable that contains [eɪ]?)
   1. 2. 3. 4. 5.
7. broad IPA transcription (e.g. Do you know how to transcribe the word *sound*?)
   1. 2. 3. 4. 5.
8. narrow IPA transcription (e.g. Do you know how to transcribe the word *transcription* precisely, showing such detailed features as the absence or presence of aspiration, devoicing, syllabic consonants, etc.?)
   1. 2. 3. 4. 5.
9. diphthongs (e.g. Do you know what are some of the English diphthongs? Do you think there are diphthongs in Japanese?)
   1. 2. 3. 4. 5.
10. triphthongs (e.g. Do you know what are some of the English triphthongs? Would you rather consider a three-vowel cluster as a diphthong plus a schwa?)
    1. 2. 3. 4. 5.
11. vowel length (e.g. In which word do you think the vowel [æ] is longer, *lap* or *lab*?)
    1. 2. 3. 4. 5.
12. contextual assimilation (e.g. Do you know that [t] in *get* tends to be replaced with [k] when followed by *kicked*? Have you noticed that *center* is often pronounced like *cenner*?)
    1. 2. 3. 4. 5.
13. historical assimilation (e.g. Do you know that [z] in *newspaper* turned into [s] and [p] in *cupboard* was dropped in the process of historical development?)
    1. 2. 3. 4. 5.

14. palatalization (e.g. Do you know the difference between the clear /l/ (as in *lead*) and the dark /l/ (as in *milk*)?)

1. 2. 3. 4. 5.

15. nasalization (e.g. Do you know that native speakers of English can distinguish *seem able* and *see Mable* even if the two phrases are respectively pronounced continuously without a pause at the word boundary?)

1. 2. 3. 4. 5.

16. glottal stop (e.g. Do you know that, in *cut it off*, the voiceless alveolar stop in *cut* or *it* is often replaced with the glottal stop?)

1. 2. 3. 4. 5.

17. flap sound (e.g. Are you aware that many Americans turn the voiceless alveolar stop into a flap in *city* or *doctor*?)

1. 2. 3. 4. 5.

18. partial assimilation (e.g. Do you know that the [z] of *news* in sentence final position tends to be partially devoiced?)

1. 2. 3. 4. 5.

19. coarticulation (e.g. Have you ever noticed that [k] in *queen* is labialised while [k] in *keen* is not?)

1. 2. 3. 4. 5.

20. dissimilation (e.g. Do you know that, in *the idea is good*, [r] is often inserted between *idea* and *is* because it is difficult to pronounce the vowel cluster? Do you know that, in spoken English, *something* is sometimes pronounced as [sʌmp θɪŋ]?)

1. 2. 3. 4. 5.

21. liaison (e.g. Have you ever noticed that, in *an apple*, [n] of *an* and [æ] of *apple* is pronounced continuously and that, in *where is it*, [r] and [ɪ] is linked?)

1. 2. 3. 4. 5.

22. deletion (e.g. Do you know that, in *most part*, the final [t] of *most* is often deleted?)

1. 2. 3. 4. 5.

23. aspiration (e.g. Do you know that /p/ is aspirated in *pin* but not in *spin*?)

1. 2. 3. 4. 5.

24. intonation (Can you distinguish the meaning of the sentence "Jenny gave Peter instructions to follow" when it is pronounced with the rising pitch on *instructions* and when the pitch is on *follow*?)

1. 2. 3. 4. 5.

25. sentence stress (e.g. How do you decide which syllables are stressed in the sentence *Mary played tennis with Brian last Sunday*?)

1. 2. 3. 4. 5.

26. accent (e.g. Regarding #25, do you know which stressed syllable is accented if none of the nouns or verb in particular has to be semantically emphasized?)

1. 2. 3. 4. 5.

27. phonotactics (e.g. Do you know the maximum number of consonants that can be clustered in the initial position of an English word?)

1. 2. 3. 4. 5.

28. syllable division (e.g. When you have to divide up the word *syllable* into syllables, how would you separate them?)

1. 2. 3. 4. 5.

II. Answer the following questions. Describe it specifically in your own language.

1. What do you think is the most interesting issue in the field of phonetics and phonology?
2. What do you think is the most useful (practical) issue in phonetics and phonology?
3. What do you think is the most difficult issue in phonetics and phonology?
4. What do you think is the most troublesome aspect of the phonetics and phonology study?
5. Why did you decide to take the phonetics and phonology course?

Appendix II

Table 4
The Frequencies at Which Students Referred to Each Phonetic/Phonological Issue (Based on the Data from Open-ended Answers)

	Interested	Useful	Difficult	Troublesome
predicting stress	1			
metric foot (rhythm)	2	4		1
consonant classification		2		2
vowels classficication		1	2	
strong/weak vowels			1	
IPA broad transcription	2	3		
diphthongs	2		1	
triphthongs			1	
vowel length	1			
contextual assimilation	4	1		1
historical assimilation	1			
nasalization	1			
glottal stop		1		
flap	1			
deletion	1		1	
aspiration			1	
intonation	1			
sentence stress	1		1	
accent	2	2	1	
syllable division			1	1
history of English	2			
broadcasting English	1			

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